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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/824,494	04/02/2001	Amr Abdelmonem	28349/10075	9376

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EXAMINER

NGUYEN, DUC M

ART UNIT	PAPER NUMBER
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2685

DATE MAILED: 06/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/824,494

Applicant(s)

ABDELMONEM ET AL.

Examiner

Duc M. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4 and 5.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

1. The references listed in the information disclosure statements submitted on 8/2/01 and 9/19/02 has been considered by the examiner (see attached PTO-1449).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim **14** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "excess length" in claim 14 is a relative term which renders the claim indefinite. The term "excess" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. "The "extra or added length to decrease the heat load" as described in the specification (page 12, lines 15-19) does not provide a standard for ascertaining the requisite degree.

3. Claims **16-17, 31-32** are objected to because of the following informalities: "the cryostat" should be changed to "a cryostat". Appropriate correction is required.

Claim Rejections - 35 USC § 103

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4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims **1-14, 18-29** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Hershtig** (US **6,212,404**) in view of **Gammon** (US **5,781,865**).

Regarding claim **1**, **Hershtig** discloses a front end system for receiving signals, comprising:

- a cooled vessel (see Fig. 11 and col. 5, line 59 – col. 6, line 9);
- a first filter disposed in the vessel to pass the first signal(see Fig. 11 and col. 5, line 59 – col. 6, line 9);
- a second filter disposed in the vessel to pass the second signal(see Fig. 11 and col. 5, line 59 – col. 6, line 9);

Here, although **Hershtig** discloses a plurality of signals and fails to disclose a manifold (or splitter) for splitting a receiving signal into the first signal and the second signal, it is noted that the use of such manifold is well known in the art as disclosed by **Gammon** (see Fig. 11, ref. 1105) so that a single antenna could be shared for receiving a plurality of signals from different service providers. Therefore, it would have been obvious to one skill in the art to provide the above teaching of **Gammon** to **Hershtig** for

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using a manifold (splitter) as claimed, so that a single antenna could be shared for receiving a plurality of signals from different service providers, for cost saving.

Regarding claim **2**, the claim is rejected for the same reason as set forth in claim 1 above. In addition, it is clear that **Hershtig** would disclose a cryostat (cryogenic refrigeration) as claimed (see Fig. 19);

Regarding claim **3**, the claim is rejected for the same reason as set forth in claim 1 above. In addition, since using a HTS material for filter in a cooled vessel is known in the art (see **Hershtig**, col. 1, lines 23-43). Therefore, it would have been obvious to one skill in the art to further modify the above teaching of **Gammon** and **Hershtig** for using HTS material as claimed, for improving filter response such as low noise characteristic.

Regarding claim **4**, the claim is rejected for the same reason as set forth in claim 1 above. In addition, since the use of such cable length for isolation is well known in the art (see Applicant's disclosure in page 11, lines 13-19, noting for the used term "well known"), it would have been obvious to one skill in the art to further modify the above teachings of **Gammon** and **Hershtig** for using certain cable length as claimed, for impedance matching, thereby reducing signal interferences.

Regarding claim **5**, the claim is rejected for the same reason as set forth in claim 1 above. In addition, it is clear that **Hershtig** as modified would disclose each receiving signal would differ in at least one of center frequency and bandwidth (see **Gammon**, band A-F in Fig. 11).

Regarding claim **6**, the claim is rejected for the same reason as set forth in claim 1 above. In addition, it is clear that **Hershtig** as modified would disclose each receiving

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signal for each service provider would have different data requirement so that they can be discriminated from each other for filtering.

Regarding claims **7-9**, the claims are rejected for the same reason as set forth in claim 1 above. In addition, it would have been obvious to provide such features (i.e, voice, data, analog, digital) as claimed, so that a variety of services could be provided to a wide range of wireless users from different service providers.

Regarding claim **10**, the claim is rejected for the same reason as set forth in claim 1 above. In addition, it would have been obvious to provide a low-noise amplifier for each signal (see **Hershtig**, Fig. 10), for improving signal reception quality.

Regarding claim **11**, the claim is rejected for the same reason as set forth in claim 1 above. In addition, since the use of a wideband filter for coupling between the antenna and the splitter is known as disclosed by **Gammon** (see Fig. 18), and since disposing a filter inside a cooled-vessel would improve signal reception quality as disclosed by **Hershtig**, it would have been obvious to one skill in the art to further modify the above teachings of **Gammon** and **Hershtig** for using a wideband filter as claimed, for improving signal reception quality.

Regarding claim **12**, the claim is rejected for the same reason as set forth in claim 1 above. In addition, it would have been obvious to provide a low-noise amplifier as claimed (see **Gammon**, Fig. 18), for improving signal reception quality.

Regarding claim **13**, the claim is rejected for the same reason as set forth in claim 1 above. In addition, it would have been obvious to one skill in the art to provide a

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mechanism as claimed (i.e, stainless steel) to reduce heat transfer (see **Hershtig**, col. 12, lines 21-26), for improving signal reception quality.

Regarding claim **14**, the claim is rejected for the same reason as set forth in claim 1 above. In addition, since adding length to a cable would increase thermal resistance is known to one of ordinary skill in the art of cabling, it would have been obvious to one skill in the art to further modify the above teachings of **Gammon** and **Hershtig** for providing excess length cables as claimed, for minimizing heating of components in the cooled vessel.

Regarding claim **18**, the claim is interpreted and rejected for the same reason as set forth in claims 11-12 above.

Regarding claims **19-27**, the claims are interpreted and rejected for the same reason as set forth in claims 18 and 2-10 above.

Regarding claims **28-29**, the claims are interpreted and rejected for the same reason as set forth in claims 18 and 13-14 above.

6. Claims **15-17** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Hershtig** in view of **Gammon** and further in view of **McNicol** (US Pat No. **6,363,262**).

Regarding claim **15**, **Hershtig** as modified would disclose all the claimed limitations, see claim 1 above, except for a second splitter (manifold). However, since each service provider receiving path as disclosed in **Gammon's** reference would obviously comprises a plurality of receivers, this would require a second splitter for each service provider as disclosed by **McNicol** (see Figs. 4-5 and col. 7, line 50 – col. 10, line

32). Therefore, it would have been obvious to one skill in the art to further incorporate **McNicol** teaching into **Gammon** and **Hershtig** for using a second manifold (splitter) as claimed, for further isolating frequency carriers/channels presented within the bandwidth allocated for each service provider.

Regarding claim **16**, the claim is rejected for the same reason as set forth in claim 15 above. In addition, it would have been obvious to locate the second splitter inside the cooled vessel for reducing noise.

Regarding claim **17**, the claim is rejected for the same reason as set forth in claim 15 above. In addition, since signal deterioration from the cooled vessel to the receiver (back-end) is relatively small, it would have been obvious to locate the second splitter near the receiver (outside the cryostat), for cost saving.

Regarding claims **30-32**, the claims are interpreted and rejected for the same reason as set forth in claims 15-18 above.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- **Hey-Shipton et al** (US 5,856,768), Transition and interconnect structure for a cryocable.
- **Feuerstein** (US 6,070,090), Input specific independent sector mapping.

8. **Any response to this action should be mailed to:**

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Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for formal communications intended for entry)

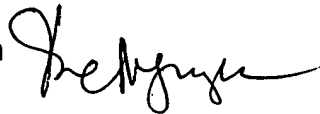
(for informal or draft communications, please label "PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington VA, Sixth Floor (Receptionist).

Any inquiry concerning this communication or communications from the examiner should be directed to Duc M. Nguyen whose telephone number is (703) 306-4531, Monday-Thursday (9:00 AM - 5:00 PM). Or to Edward Urban (Supervisor) whose telephone number is (703) 305-4385.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-4700.

Duc M. Nguyen



May 28, 2003